

Notes on Neotropical Veliidae (Hemiptera) IX: additional new species
of *Paravelia* from South America

by

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Abstract

Four new species of *Paravelia* are described: *P. dilatata* from Surinam and Brazil; *P. foveata*, *P. cupariana* and *P. juruana* from Brazil.

Keywords: *Paravelia*, Neotropical, new species.

In earlier papers of this series (J. POLHEMUS & D. POLHEMUS, 1984, in press) we pointed out that *Paravelia* BREDDIN as presently construed contains several generic entities that will be separated and characterized in a work now in preparation, and we described several new species in *Paravelia* sensu strictu. In the present work we add four more new species to the latter genus.

We are indebted to the following individuals and institutions for the opportunity to study specimens; abbreviations for the various collections are given in parentheses and used in the text: Dr. Nico NIESER, Zoology Laboratory, Rijksuniversiteit, specimens to be placed in the Zoologisch Museum, Utrecht (UM); Dr. H. H. WEBER, Kiel (WC) including specimens collected by members of the Max Planck Institute at Plön (Plön), type specimens collected by MPI members in Brazil to be placed in the Instituto Nacional de Pesquisas da Amazônia (Entomology Collections) Manaus/AM, Brazil; Dr. R. T. SCHUH, American Museum of Natural History, New York (AMNH); Dr. Peter ASHLOCK, University of Kansas, Lawrence (KU); POLHEMUS Collection (JTP). Unless otherwise noted, for all measurements 60 units = 1 mm.

Description

Brachypterous male: Of moderate size, elongate, broadest across greatly expanded medial part of pronotum; general coloration orange brown; habitus as in Fig. 1. Length 5.65 mm; maximum width 2.08 mm.

Head orange brown, eyes silvery; distinct medial furrow present on frons and vertex; a small pit present on vertex near inside margin of each eye; frons and vertex set with upright brown setae, interspersed with longer fuscous setae; facial trichobothria extremely long. Antennae yellow brown, segment IV pallid; segment I thickly set with fuscous setae exceeding diameter of segment in length; segments II - IV covered with recumbent short golden setae interspersed with longer upright fuscous setae; segment I stoutest, curved; segments II and III linear; segment IV fusiform; proportions of segments I - IV as follows: 61; 46; 39; 41.

Pronotum orange brown, darker centrally; width/length - 125/120; anterior lobe small, compressed, set with few coarse pits medially; a row of coarse pits present along forward margin adjoining head; posterior lobe large, separated from anterior lobe by indistinct sulcus, medial part greatly expanded, rounded; surface of posterior lobe set with coarse shallow pits containing silvery hairs, covered with fine golden setae; long upright fuscous setae present thickly on projecting angles, more sparsely centrally; faint median carina present; posterior margin tapering to a rounded point.

Abdomen orange, brown, connexiva reflexed at approx. 45 degree angle; surface thickly set with fine recumbent gold setae and long upright fuscous setae; exposed tergites with shallow rectangular transverse pits. Wings brachypterous, reaching only two-thirds length of abdomen; color dark brown, veins gold; two (1 + 1) very small elongate oval white spots present basally near costal veins; a very small round white spot present medially caudad; tips of wings rounded.

Dorsum brown, thickly set with upright golden setae; rostrum yellow, glabrous, tip black. Legs yellowish, tips of tarsi infuscated, femora distinctly biannulate with brown; fore tibia with black ridge on ventral face apically; all segments clothed with short recumbent gold setae; trochanters, femora, and tibiae thickly set with erect fuscous setae; legs with following proportions:

	Femur	Tibia	Tarsal II	Tarsal III
Anterior	84	82	16	20
Middle	106	108	28	24
Posterior	125	140	28	26

Genital segment brown, set with gold setae; parameres broad, sharply bent, squared off at apices, shape as in Figure 4.

Female: Similar to male in general structure and coloration, but lacking the greatly expanded angles of the pronotum; wings with two (1 + 1) elongate oval white spots at basal angles. Length 5.35 mm; width across humeri: 1.75 mm.

Material examined: Holotype, male: SURINAM, Saramacca, Coesewijne-project, 12 km. W. of Saramacca-brug, SN 368, III-24-79, N. NIESER (UM). Paratypes: 1 ♂, 3 ♀♀, BRAZIL, Amazonas, Reserva Ducke, 25 km. NE of Manaus, 120 m, VII-22-73, R. T. SCHUH, from marginal vegetation in impounded section of forest stream (AMNH, JTP).

Etymology: The name *dilatata* refers to the bizarre anteriorly expanded pronotum of the male of this species.

Discussion: The peculiar male pronotal form of *Paravelia dilatata* n. sp. immediately separates it from all other *Paravelia* species. The large size and pallid fourth antennal segment are diagnostic for both sexes.

Description

Macropterous male: Small, elongate, broadest across humeral angles of pronotum; colorations orange brown with scattered white and fuscous areas. Length 3.35 mm; maximum width 1.14 mm.

Head orange brown, eyes dark red; distinct medial furrow present on frons and vertex; frons and vertex set with short fuscous setae; typical four pairs of facial trichobothria present. Antennae dark brown; segments I - IV covered with fine pallid setae; segments II - IV with scattered longer upright fuscous setae, lengths of these hairs exceeding diameters of segments; segment I stoutest, curved; segments II and III linear, tapering near bases; segment IV stout, fusiform; proportions of segments I - IV as follows: 20; 24; 20; 19.

Pronotum orange brown, faint medial carina present; two (1 + 1) subrectangular white patches present on anterior lobe on either side of median line; anterior lobe separated from posterior lobe by a row of deep coarse pits; collar separated from anterior lobe by a similar row; surface of posterior lobe coarsely rugose, foveate, set with numerous small deep pits; margins of pits bearing minute silvery setae; surface of posterior lobe lacking setae, vaguely pruinose when viewed laterally; posterior margin raised, smooth; apex rounded, bearing a tuft of gold setae; humeri prominent, rounded; pleural region pruinose, set with deep, coarse pits; scent channel with a row of black setae.

Abdomen orange brown; connexiva moderately reflexed, covered with fine golden setae. Hemelytra long, macropterous, reaching nearly to tip of abdomen; coloration dark brownish black, lighter in cells; basal area with two (1 + 1) large, roughly ovate white patches between costal and radial veins; two (1 + 1) smaller round white patches present basally between radial and cubital veins; crescent-shaped white area present centrally caudad; costal margins bearing erect fuscous setae; posterior wing margins rounded.

Ventral surface orange brown, pruinose from certain angles; rostrum yellow, glabrous, with brown stripe lengthwise medially, tip infuscated; gula with six deep pits of various sizes; area immediately below eye and along ventral portion of pronotal collar set with minute conical black setae; abdomen with many fine shallow pits, surface covered with fine pallid setae. Legs yellow brown, trochanters pallid; tarsi, tibiae, and tips of femora infuscated; all segments covered with fine recumbent gold setae; tibiae and fore femore with scattered longer fuscous hairs; trochanters and coxae set with erect pallid setae; middle tibiae with about ten very long black setae on posterior face; legs with following proportions:

	Femur	Tibia	Tarsal II	Tarsal III
Anterior	44	43	4	16
Middle	60	64	12	19
Posterior	67	77	8	19

Genital segment brown, covered with fine gold setae; longer fuscous setae present near bases of parameres; parameres gently curved, slender, ends rounded, shape as in Figure 2.

Macropterous Female: Similar to male in general structure and coloration but larger and more robust; wings longer, exceeding tip of abdomen.

Material examined: Holotype, male, and allotype, female: BRAZIL, Amazonas, Rio Marauia, I-26-63, A 500, E. J. FITTKA U(Plön). Paratypes: 8 ♂♂, 4 ♀♀, same data as types (JTP, WC).

Etymology: The name *foveata* refers to the numerous shallow hair free fovea on the pronotum and abdomen of this species.

Discussion: *Paravelia foveata* n. sp. resembles *P. hungerfordi* DRAKE & HARRIS in that both species have numerous hair free fovea on the pronotum and venter of the abdomen. The entire dorsum of *P. hungerfordi* is set with setae longer than the width of the first antennal segment whereas *P. foveata* has only scattered short upright setae and the dorsum is essentially hair-free. The foveae on the body separate these two species from all other known *Paravelia* species. *P. hungerfordi* is known to us only by the female paratype in the DRAKE Collection so a comparison of male genitalia is not possible.

Description

Macropterous male: Small, elongate, broadest across humeri; general coloration orange brown with scattered lighter patches. Length 3.57 mm; maximum width 1.31 mm.

Head orange brown, eyes silvery; medial furrow present on frons and vertex; frons and vertex set with upright gold setae; typical facial trichobothria present; two (1 + 1) small pits present on vertex behind eyes. Antennae brown, segment I darker apically; all segments clothed with fine recumbent gold setae intermixed with longer upright fuscous setae; segment I stoutest, curved; segments II and III linear; segment IV slender, tapered; proportions of segments I - IV as follows: 34; 24; 26; 26.

Pronotum orange brown; median line, posterior margin, and area anterior to humeri orange; faint median carina present; anterior lobe set off by a row of coarse pruinose pits, a second similar row present along forward margin adjoining head; posterior lobe swollen, convex, surface set with numerous round pits and covered with fine gold setae interspersed with upright fuscous setae; posterior margin raised, smooth, apex broadly rounded, bearing a tuft of long fuscous setae; apical area pruinose; humeri produced into rounded points, tips pruinose; pleural region set with coarse pits.

Abdomen orange brown, connexiva strongly reflexed, clothed with fine gold setae and long upright fuscous setae. Wings dark brown, veins paler; macropterous, reaching to base of genital segment; two (1 + 1) subtriangular white patches present centrally along costal margins; an ovate white area present centrally caudad, flanked by two (1 + 1) irregular tan patches along apical wing margin; veins set with long upright fuscous setae basally; wing tips rounded.

Venter orange brown, abdomen and thorax with scattered broad pruinose areas; rostrum yellow, glabrous, tip black; abdomen covered with recumbent gold setae. Legs yellow, apices of femora, bases and tips of tibiae, and tarsi embrowned; all segments clothed with recumbent gold setae; femora and tibiae with long upright fuscous setae; fore tibia with black raised ridge apically; proportions of legs as follows:

	Femur	Tibia	Tarsal II	Tarsal III
Anterior	46	48	5	16
Middle	65	74	7	19
Posterior	76	89	8	19

Genital segments brown, covered with fine gold setae; long fuscous setae present basally; parameres blunt, ovate, shape as in Figure 3.

Macropterous female: Similar to male in general structure and coloration, connexiva more strongly reflexed against wings. Length 3.57 mm; maximum width 1.37 mm.

Material examined: Type, male, and allotype, female: BRAZIL, Pará, Rio Cupari, Igarape Prainha, S 209, XII-25-47, H. SIOLI (Plön). Paratypes: 1 ♂, 1 ♀, same data as types (JTP).

Etymology: The name *cupariana* derives from the type locality, the Cupari River, a right tributary of the Rio Tapajós, state of Pará, Brazil.

Discussion: *Paravelia cupariana* n. sp. belongs to the group of small *Paravelia* species that lack evident modifications (spot characters) that immediately distinguish them. Further, this species lacks the closely set short black conical setae on the head, pronotum and connexival margins that characterize an entire group of congeners, although the dorsum is thickly set with slender setae longer than the width of the first antennal segment. The first antennal segment is clearly longer, and the fourth antennal segment clearly shorter, than the width of the head. These characters along with the coloration and male genital characteristics given in the description will separate this species from any described *Paravelia* species. The closest congeners are *Paravelia cognata* DRAKE & HARRIS and *Paravelia capillata* DRAKE & HARRIS which both have the fourth antennal segment much longer than the head width.

Description

Macropterous male: Of moderate size, robust, broadest across humeral angles of pronotum; general coloration dark brown with scattered white spots on hemelytra. Length 5.65 mm; maximum width 2.02 mm.

Head dark brown, eyes silvery; distinct medial furrow present on frons and vertex; a small pit present on vertex near each inner eye margin; frons and vertex thickly set with short gold setae. Antennae dark brown, shining, thickly set with minute gold setae; segment I stoutest, curved; segments I - IV as follows: 52; 41; 34; 43.

Pronotum dark brown, lighter on humeri; faint medial carina present; anterior lobe separated from posterior lobe by a row of shallow pits, collar separated from anterior lobe by a similar row; posterior lobe coarsely and shallowly pitted, posterior margin raised, rounded; posterior apex coming to an acute, produced point; humeri prominent, rounded; entire pronotal surface covered with upright gold setae; pleural region with a row of coarse pits slanting forward and downward from humeri.

Abdomen black, lighter at connexival sutures; connexiva shallowly reflexed, margins set with fine recumbent gold setae. Wings macropterous, reaching to base of genital segment; coloration brown, veins darker basally, lighter distally; two (1 + 1) ovate white spots present basally between costal and radial veins; a large irregular white patch present at wing tip; veins set with long upright black setae basally; wing tips rounded.

Dorsum dark brown, thickly set with short recumbent golden setae intermixed with longer upright gold setae; rostrum brown, glabrous, tip infuscated. Legs dark brown, femora with long upright fuscous setae on posterior faces; fore tibia with black ridge on ventral face apically; all segments clothed with short recumbent gold setae, these setae longer near apices of tibiae; proportions of legs as follows:

	Femur	Tibia	Tarsal II	Tarsal III
Anterior	68	82	14	26
Middle	88	94	26	31
Posterior	120	137	28	29

Genital segment brown, set with fine gold setae; parameres small, ovate, shape as in Figure 5.

Macropterous female: Similar to male in general structure and coloration. Length 5.71 mm; maximum width 2.08 mm.

Material examined: Holotype, male, and allotype, female: BRAZIL, Amazonas, Vic. Joao Pessoa (Sao Phelipe), Rio Juruá, VII-10 to IX-20-1936, # 3796, A. M. OLLALA (KU). Paratypes: 8 ♂♂, 7 ♀♀, same data as types (KU, JTP).

Etymology: The name *juruana* derives from the type locality, the Juruá River of Brazil.

Discussion: *Paravelia juruana* n. sp. is loosely allied to the previous species (*P. cupariana* n. sp.) in that it lacks ventral processes on the male seventh sternite, lacks minute conical setae on the body, has a hairy dorsum, and has a fourth antennal segment that is shorter than the width of the head, but differs in that the first antennal is shorter than the width of the head and in being much larger than *cupariana*. The pronotum is acuminate posteriorly which immediately separates *juruana* from all *Paravelia* species that lack the male ventral processes.

References

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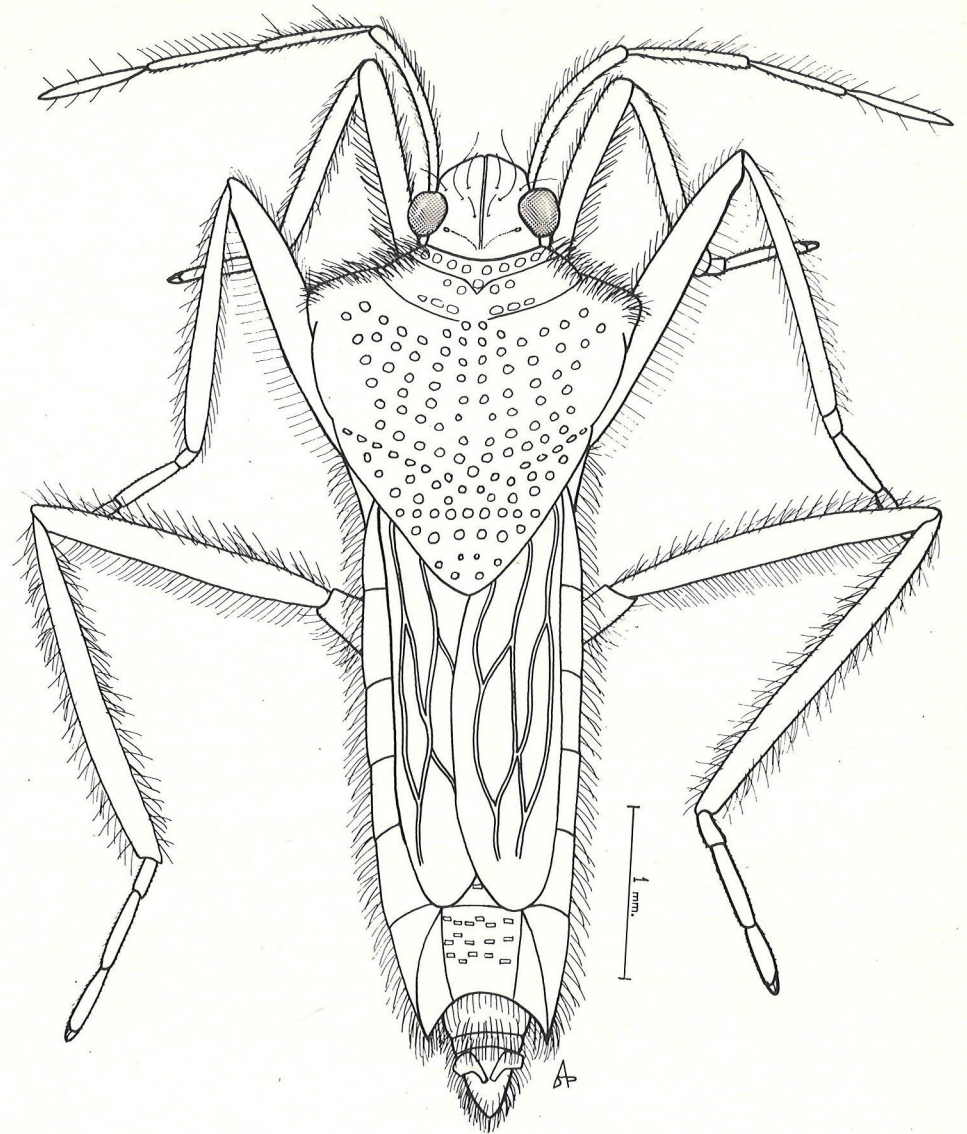


Fig. 1:
Paravelia dilatata n. sp., male, dorsal habitus.

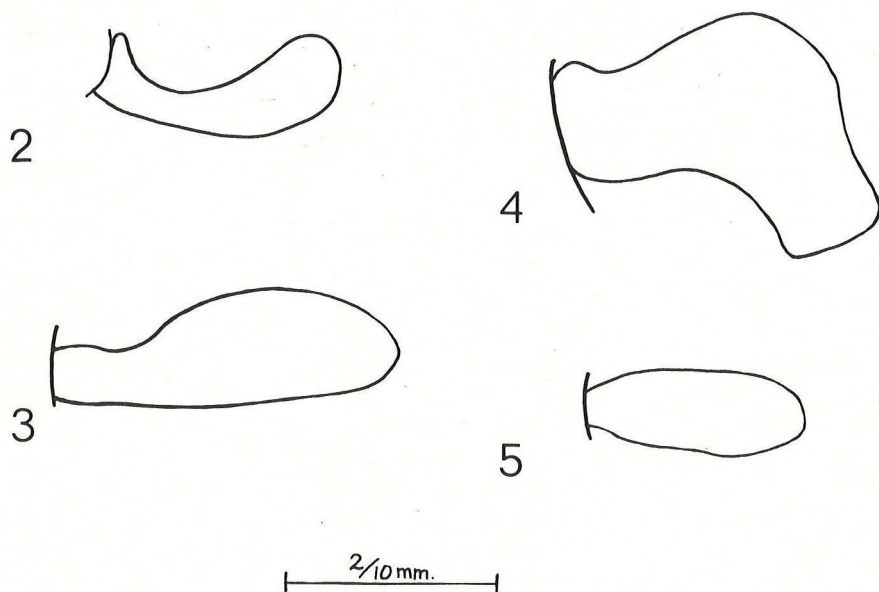


Fig. 2 - 5:

2: *Paravelia foveata* n. sp., male left paramere; 3: *Paravelia cupariana* n. sp., male left paramere;
4: *Paravelia dilatata* n. sp., male left paramere; 5: *Paravelia juruana* n. sp., male left paramere.